

WHAT IS CLAIMED IS:

1. An apparatus of converting ocean wave energy into electric power, comprising:

a floating section comprising:

5 a float adapted to ride on the surface of the ocean in reciprocal vertical motion in response to ocean wave front action, and

a lever adapted to ride on the surface of the ocean, the lever having one end coupled to the float; and

a fixed section comprising:

10 a fulcrum for pivotably supporting the lever,

a magnet coupled to the other end of the lever,

one or more cores together with the magnet for forming a magnetic circuit,

one or more electric coils each wound on the corresponding core,

resilient means adjacent the magnet interconnected the lever and the

15 magnet,

a plurality of barriers, and

support means,

whereby an upward motion of the float caused by the impact of waves will move the magnet downward by the leverage of the lever and compress the

20 resilient means, a downward motion of the float will move the magnet upward by the leverage of the lever and expand the resilient means, and repeating of the upward and the downward movements of the magnet will induce a voltage in the electric coils.

2. The apparatus of claim 1, wherein the fixed section is mounted on a
25 seacoast, ship, or production platform.

3. The apparatus of claim 1, wherein the cores are parallel, the electric coils are parallel, and each of the barriers is disposed between two adjacent ones of

the cores.

4. The apparatus of claim 1, wherein the magnet is formed of the same ferromagnetic material as each of the cores, the apparatus further comprising a plurality of second electric coils each wound on the corresponding core, and an
5 external power source electrically coupled to the second electric coils.

5. An apparatus of converting ocean wave energy into electric power, comprising:

support means mounted on a fixed section,

an intermediate vibration member having a lower portion submerged in the
10 seawater, the vibration member including a driving shaft rotatably coupled to the support means,

a magnet on top of the vibration member,

one or more cores together with the magnet for forming a magnetic circuit,

one or more electric coils each wound on the corresponding core,

15 left and right resilient means adjacent the vibration member and coupled to the intermediate vibration member, and

a plurality of barriers,

whereby a vibration of the vibration member caused by the impact of waves will compress the left resilient means and expand the right resilient means via
20 the driving shaft so as to move the magnet, and repeating of the movement of the magnet will induce a voltage in the electric coils.

6. The apparatus of claim 5, wherein the fixed section is a dam, seacoast, or breakwater.

7. The apparatus of claim 5, wherein the cores are parallel, the electric coils
25 are parallel, and each of the barriers is disposed between two adjacent ones of the cores.

8. The apparatus of claim 5, wherein the magnet is formed of the same

ferromagnetic material as each of the cores, the apparatus further comprising a plurality of second electric coils each wound on the corresponding core, and an external power source electrically coupled to the second electric coils.